

## PREDICT SARS-related Coronaviruses Serologic Surveillance

### Pilot Study in China

PREDICT/China team piloted a serologic surveillance from 2015 to 2017 within 1,530 individual residents in villages close to the bat caves where coronaviruses were detected, the study has provided the first serological evidence of likely human infection by bat SARSr-CoVs<sup>1</sup>.

ELISA methods were developed using the purified nucleocapsid protein of MERS-CoV, SARSr-CoV, HKU9 CoV and HKU10 CoV as coating antigen respectively, and using Anti-Human IgG Monoclonal antibody as secondary antibody. All serum samples were screened for antibodies against the 4 bat coronaviruses, ELISA positive samples were then further tested by confirmatory Western blot.

### Protocol Sharing & Training

Developed ELISA and relevant protocol at Wuhan Institute of Virology, Chinese Academy of Sciences will be available to share with countries who are implementing serologic surveillance; Training at WIVCAS will be provided if needed.

### Country

China, Vietnam, Lao PDR, Thailand, Myanmar\* 1) SARSr-CoVs were detected; 2) human serum samples collected; 3) have lab capacity to do serologic testing.

*\*This lab is working through contractual issues. May consider another Smithsonian country.*

### Budget

\$75,000 in total, \$15,000/country/year \*5 countries \*1 year.

Cost is estimated at the rate of \$5.3/sample testing, based on the work at WIVCAS for testing of 1,500 human serum samples for MERS-CoV, SARSr-CoV, HKU9 CoV and HKU10 CoV:

- One technician: \$6,000 (\$2,000/month \* 3 months)
- Reagent: \$2,000
- Existed lab facility and capacity

Detailed budget will be finalized after

- Confirm with country/EIDITH team to make sure that there are adequate bat and human serum samples collected or will be collected.
- Confirm lab capacity in country, advanced labs could supplement with some internal funds (e.g. tech time or general reagents)

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<sup>1</sup> Wang, N., Li, S.-Y., Yang, X.-L., Huang, H.-M., Zhang, Y.-J., Guo, H., et al. (2018). Serological Evidence of Bat SARS-Related Coronavirus Infection in Humans, China. *Virologica Sinica*, 4, 76. <http://doi.org/10.1007/s12250-018-0012-7>